(iii) increasing the basic knowledge of aerodynamics, structural dynamics, fatigue, and electrical systems interactions as applied to wind energy technology; and

(iv) improving the compatibility of electricity produced from wind farms with conventional utility needs.

(B) Specific goals for the Wind Energy Research Program shall be to—

(i) reduce average wind energy costs to 3 to 5 cents per kilowatt hour by 1995;

(ii) reduce capital costs of new wind energy systems to $500 to $750 per kilowatt of installed capacity by 1995;

(iii) reduce operation and maintenance costs for wind energy systems to less than one cent per kilowatt hour by 1995; and

(iv) increase capacity factors for new wind energy systems to 25 to 35 percent by 1995.

(2) PHOTOVOLTAICS.—(A) In general, the goals of the Photovoltaic Energy Systems Program shall include improving the reliability and conversion efficiencies of and lowering the costs of photovoltaic conversion. Research efforts shall emphasize advancements in the performance, stability, and durability of photovoltaic materials.

(B) Specific goals of the Photovoltaic Energy Systems Program shall be to—

(i) improve operational reliability of photovoltaic modules to 30 years by 1995;

(ii) increase photovoltaic conversion efficiencies by 20 percent by 1995;

(iii) decrease new photovoltaic module direct manufacturing costs to $800 per kilowatt by 1995; and

(iv) increase cost efficiency of photovoltaic power production to 10 cents per kilowatt hour by 1995.

(3) SOLAR THERMAL.—(A) In general, the goal of the Solar Thermal Energy Systems Program shall be to advance research and development to a point where solar thermal technology is cost-competitive with conventional energy sources, and to promote the integration of this technology into the production of industrial process heat and the conventional utility network. Research and development shall emphasize development of a thermal storage technology to provide capacity for shifting power to periods of demand when full insolation is not available; improvement in receivers, energy conversion devices, and innovative concentrators using stretch membranes, lenses, and other materials; and exploration of advanced manufacturing techniques.

(B) Specific goals of the Solar Thermal Energy Systems Program shall be to—

(i) reduce solar thermal costs for industrial process heat to $9.00 per million Btu by 1995; and

(ii) reduce average energy costs for

ge solar thermal costs for electricity to 4 to 5 cents per kilowatt hour by 1995.

(4) OTHER TECHNOLOGIES.—The Secretary shall submit to the Congress, as part of the first report submitted under section 9, recommendations for specific cost goals and other pertinent goals for 1995 for Department of Energy research, development, and demonstration programs in Biofuels Energy Systems, Hydrogen Energy Systems, Solar Buildings Energy Systems,